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MAINE AGRICULTURAL EXPERIMENT STATION.

BULLETIN No. 9.

SECOND SERIES.

TOMATOES.

Much of the work with tomatoes during the past season was in continuation of experiments previously undertaken, and related principally to methods of culture. The following condensed notes will indicate in a general way the conclusions reached.

1. *Effect of Early Setting*:—Duplicate lots of plants were given the same treatment early in the season. One lot was removed to the field May 23, the other a week later. The first lot was severely checked by frost May 27, but in spite of this fact the plants recovered and there was practically no difference in the yield of the two lots. The slight variation found, was in favor of the early set plants.

Conclusion:—Indications still point to the value of early setting of tomato plants.

2. *Value of Pot Culture*:—The importance of careful handling of tomato plants has previously been emphasized by the writer. During the past season a test was made, as to the value of growing plants in pots previous to setting in the field. Twelve plants of each of four varieties were transferred from the seed flats to thumb-pots, later to 3-inch, and then to 4-inch pots, and to the field June 1st. Duplicate lots were handled in boxes in the ordinary manner on the same dates.

In every instance the plants handled in pots produced a larger number of fruits and a greater total weight of the product than those from boxes; but the individual fruits were slightly smaller.

Computing the yield per acre on the basis of the weight of fruit picked previous to October 1st, and considering the plants placed five feet apart each way, we found for the first three varieties, a difference of more than 29 bushels each, in favor of the pot grown

plants. This difference at 75cts. per bushel, (none of our fruit sold for less than 60cts. per bushel, and early in the season we received $1.75 at wholesale), would amount to $21.83 per acre, a sum far in excess of the cost of pots and expense of handling.

Conclusion:—There appears to be a marked increase in the productiveness of plants handled in pots previous to setting in the field.

3. *Individual Variation*:—Very often a new variety is recommended, or a particular method of culture is advocated, because excellent results have been obtained for a single season. The danger of drawing conclusions from such limited experience, was pointed out by the writer last year, when it was found that "In no case were the results from duplicate tests uniform."*

Duplicate lots of each of three varieties of tomatoes were grown during the past season. All of these were given the same treatment in the house, and were planted side by side in the field, receiving the same culture. The results obtained, bear out our former conclusions to such an extent, that the results of certain methods of culture undertaken, are withheld for further verification.

The weight of individual fruits was practically uniform, but the variation in number of fruits, and in the consequent weight of the product, was very marked. The date of ripening was also variable.

Conclusion:—The individual variation of plants of any given variety is often such as to obscure any effects of different methods of culture, and render conclusions drawn from a single season's work very unreliable.

4. *Crossing*:—The work of developing a tomato which shall be of sufficient earliness to be profitable as a market crop in those sections where the seasons are short, was detailed in our last annual report.† Selections and further crosses were made the past season with interesting and promising results.

The *Lorillard-Peach* cross, showed a less marked increase over the pure Lorillard, in number of fruits, than was the case in the first generation. In the second generation, the influence of the male parent on the character of the fruit, was shown by several individuals which assumed the form and the rough skin of *Peach*.

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* Rep. Maine Exp. Sta. 1892, p. 64.

† Rep. Maine Exp. Sta. 1892, p. 65.

The *Ignotum-Peach* cross, showed a similar falling off in the second generation,—the difference amounting to nearly 44 per cent.

5. *Varieties*:—The tomatoes were started in the forcing house March 27. All varieties were given the same treatment while in the house, and were transferred to the open field June 1st. The first ripe fruits were found July 25, on Golden Ball and Long Keeper. Two days later one or more fruits were gathered from Aristocrat, Great B. B., Ithaca and Maule's Earliest.

On October 1st, when the season was practically ended, the following varieties were found, in the order named, to have been the most productive: Golden Ball, Improved Peach, Maule's Earliest, Burpee's Climax, Lorillard, Ithaca and Belmont. Optimus, which was the most productive sort grown last year, stood *ninth* (or dropping the first two varieties, which are of value for amateur culture only, *seventh*) in the list the present season.

The large late varieties, such as Belmont, Buckeye State and Stone, decayed very badly late in the season. The same is true to a certain extent of Ignotum, Matchless and Optimus.

Maule's Earliest and Burpee's Climax, were both much smoother than is usual with very early sorts, and are promising.

Ithaca and Long Keeper deserve the credit given in previous reports.

Lemon Blush failed to blush, and was consequently inferior to Golden Queen.

Buckeye State, Royal Red and Stone, while of merit as individual fruits, are all too late for our short seasons. Ponderosa will also be discarded for similar reasons.

Terra Cotta was of very unsatisfactory quality and is not a firmly fixed variety.

Great B. B., in spite of its name, is a fairly good variety. It decayed badly late in the season.

Summary of Tomato Notes, 1893.

1. The conclusions of former years as to the value of setting tomato plants as early in the spring as possible are confirmed.

2. Plants handled in pots previous to setting in the field are more vigorous and productive than those not so handled,—a fact which may be of great importance to the commercial grower.

3. Individual variation is often such as to render the work of any one season unreliable.

4. The productiveness of any given variety may be largely increased by crossing with some of the smaller less valuable sorts. But this increased productiveness may be partially or wholly lost in a few years even if good culture is given. The variety will quickly "run out."

5. It seems possible that seeds from plants grown under high culture in the house, may give better results than those from plants not so treated.

6. By combining the *Lorillard-Currant* hybrid with the Lorillard, the size has been fully doubled and the quality much improved; but there has been a reduction in the number of fruits produced.

7. Of the newer varieties, Burpee's Climax, Maule's Earliest and "B. B." (Brinton's Best) were among the most promising. Buckeye State, Ponderosa, Royal Red and Stone are too late for our climate. Lemon Blush lacked its distinguishing characteristic, and Terra Cotta was of inferior quality.

W. M. MUNSON.

MAINE STATE COLLEGE,
ORONO, ME., March 15, 1894.